

# Chapter 17

## Cultural Resources

Native Americans initiated California's rich cultural heritage many generations before Europeans settled in the area. A third of all Native Americans within current U.S. boundaries lived in California. In the late 1600s, California's Hispanic forefathers began to build missions that attracted an influx of people from Europe, Africa, and many other countries. The 1849 Gold Rush initiated a significant migration of people from Africa, Chile, Mexico, China, France, England, Germany, Ireland, Australia, Hawaii, Philippines, and elsewhere (Starr 2000).

Preserving the culture and history of our nation's past are the goals of regulations that include the National Historic Preservation Act (NHPA), Antiquities Act of 1906, Archeological Resource Protection Act of 1979, and Historic Sites Act of 1935. The NHPA regulations (36CFR800) require that Federal agencies seek information, as appropriate, from the State Historic Preservation Officer (SHPO), the Advisory Council on Historic Preservation, Indian tribes, and other individuals and organizations likely to have knowledge of, or concerns with, historic properties in the area of potential effect. These organizations and individuals are integral in identifying issues related to the Program's potential effects on historic properties. Similar State regulations<sup>1</sup> protect archeological, paleontological, and historical sites and specifically provide for identification and protection of traditional Native American gathering and ceremonial sites on State land.

Cultural resources defined within the framework of these regulations include archeological sites, historic sites, and traditional cultural properties associated with the values of Native Americans and other cultural groups. While studying cultural resources provides insight into the adaptation of early people and reveals important information, actions that physically disturb a site, alter its setting, or introduce elements out of character with the site may constitute an adverse effect. If a site is eligible for inclusion in the National Register of Historic Places (NRHP), any type of physical damage results in a permanent loss of information that reduces our understanding of the site's contribution to the past.

### 17.1 Affected Environment/Existing Conditions

Environmental Water Account (EWA) actions could result in both beneficial and adverse effects on cultural resources. A description of the relationship between EWA actions and cultural resources follows:

- Acquisition of stored reservoir water, which could draw down reservoirs below the Baseline Condition in the Upstream from the Delta Region. These lower reservoir levels could increase exposure of cultural resources to increased cycles of

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<sup>1</sup> Including but not limited to Public Resources Code (PRC) Sections 5097-5097.6, 5020.10, 5020.5, 5024.4(6), 5079.60, 5079.61, 5079.63, and Senate Resolution Number 87.

inundation and drawdown potentially eroding the value and character of the historical resource.

- Groundwater substitution and crop idling would increase reservoir levels from the Baseline Condition, as increasing amounts of water remain in the reservoir. Surface elevations in Folsom Lake and Lake Oroville would be higher than the Baseline Condition in April, May and June; elevations in Lake Shasta could increase in June under certain hydrologic conditions<sup>2</sup>.

Release of the water to EWA during July through September would decrease surface elevations to low operating levels earlier than the Baseline Condition. Releases would not exceed normal operating levels in Lake Shasta, Folsom Lake, and Lake Oroville reservoirs. Therefore, groundwater substitution and crop idling releases would not expose previously submerged artifacts and would not affect cultural resources in these reservoirs.

The pattern of water releases from these reservoirs would change, which would change the flows in the rivers downstream. The rivers, however, would not decrease below minimum flows, and would stay within historic channels. Groundwater substitution acquisitions and the water transfer process involving crop idling would not affect cultural resources in Lake Shasta, Folsom Lake, and Lake Oroville reservoirs. Therefore, cultural resources in these reservoirs will not be discussed further.

- Crop idling would have the potential to affect cultural resources if fugitive dust from idled fields (Chapter 8, Air Quality) interfered with the character of nearby cultural resources. Air quality and soil erosion mitigation measures outlined in Section 8.2.7 would reduce potential air quality effects on cultural resources and this issue is not addressed further in this chapter.
- Source shifting would delay the delivery of water to participating State Water Project (SWP) or Central Valley Project (CVP) contractors, and the contractors would use an alternate source of supply. If these alternate supplies were drawn from a surface water reservoir, these reservoirs could draw down earlier in the year. The surface elevations would remain within historic levels. Pre-delivery of water to reservoirs proposed for source shifting would increase surface water elevations earlier in the year. Operational changes subsequent to source shifting would have no effect on cultural resources.

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<sup>2</sup> Water from Lake Shasta is released in April and May to protect temperature and flow requirements on the Sacramento River. In some years, (depending on hydrologic conditions) Lake Shasta could store EWA water in June.

- The EWA actions will not make operational changes in the Delta that would affect cultural resources in the Delta region. Therefore the Delta is not an area of concern for cultural resources.

Section 7.11 of the Programmatic Environmental Impact Statement/Environmental Impact Report (CALFED PEIS/EIR) contains a general description of prehistoric resources, historic resources, traditional cultural properties, and Native American groups for each of the CALFED regions. The CALFED regions have different boundaries than the EWA regions, but they include the entire EWA study area (Chapter 3). The cultural resources information is incorporated by reference into this EIS/EIR; however, conclusions rely on information contained within this document.

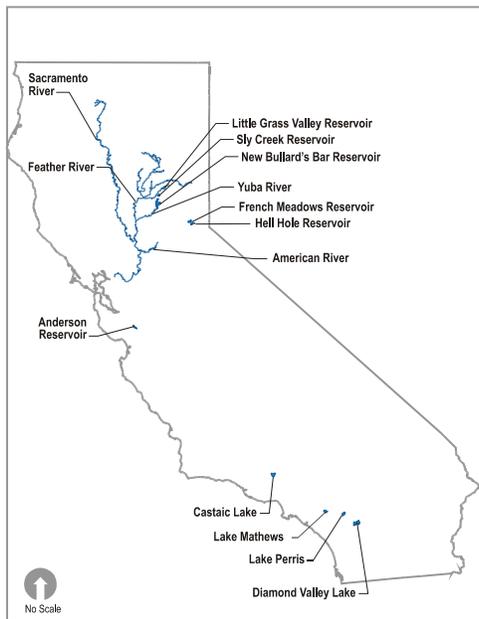
The cultural resource descriptions in the CALFED PEIS/EIR do not include explanations of ethnographic resources because listings of properties with traditional cultural value are not always available through archeological, historical, or architectural surveys. For the purpose of this document ethnographic resources possess a dynamic, tangible relationship with traditional cultural properties. Traditional cultural properties are those eligible for inclusion in the National Register because of their association with cultural practices or beliefs of a living community that a) are rooted in that community's history, and b) are important in maintaining the continuing cultural identity of the community (Parker and King, 1998).

Because the CALFED PEIS/EIR provides general information on cultural resources, the following section focuses on tangible ethnographic resources in areas potentially affected by EWA water transfers and provides a general summary of historic resources in each river region. Identifying and maintaining traditional cultural properties and ethnographic resources is consistent with California guidance and U.S. Forest Service's California Native American policy.

This section describes existing cultural resources in regions affected by the EWA. The level of detail that is presented is proportional to the expected effect of EWA water transfers. The following description mainly focuses on areas potentially affected by acquisition of stored reservoir water and provides a less detailed analysis of areas proposed for source shifting.

### **17.1.1 Area of Analysis**

Cultural resources analysis divides the study area into the Upstream from the Delta Region and the Export Service Area. Acquisitions that define the area of analysis include use of stored reservoir water and source shifting. In the Upstream from the Delta Region purchase of stored reservoir water could potentially affect cultural resources. Discussion will proceed from north to south along the Feather, Yuba, and American Rivers. There would be no acquisition of stored reservoir water from reservoirs on the Sacramento River. Reservoirs proposed for purchase of stored reservoir water along the Feather include Little Grass Valley and Sly Creek; New Bullards Bar on the Yuba; and French Meadows and Hell Hole reservoirs on the American River. The area of analysis includes a ¼ mile radius surrounding each reservoir.



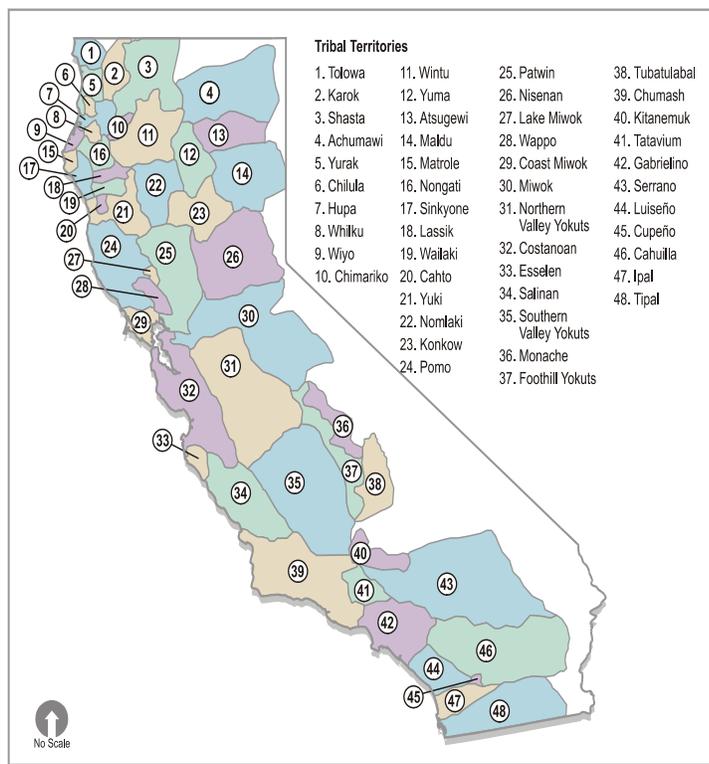
**Figure 17-1**  
**Cultural Resources Area of Analysis**

Source shifting could potentially affect cultural resources in the Export Service Area. Reservoirs proposed for source shifting include Anderson Reservoir, Castaic Lake, Lake Perris, and Diamond Valley. (Please refer to Figure 17-1.)

### 17.1.2 Upstream from the Delta Region

Native American tribes that occupied the Upstream from the Delta Region at the time of contact included the Pit River Indians, Yana, Nisenan, Maidu, Konkow, and Sierra Miwok (Figure 17-2 and below). Evidence of the early human occupation along the headwaters of the Feather, Yuba, and American Rivers dates from 2000 B.C. or earlier to 500 A.D.

- Pit River Indians include the Achumawi and Atsugewi, whose traditional territory occupied areas within the northeastern part of California (Olmsted and Stewart 1978).



**Figure 17-2**  
**Linguistic Tribal Territories**  
(Native Web 2002)

- Yana traditionally occupied the northern portion of the Sierra Nevada. Yana territory extended from southwest of Mount Lassen to the upper reaches of the Sacramento River Valley (San Diego State University 2002).
- Valley Nisenan, sometimes referred to as Southern Maidu, had scattered villages along the margins of primary watercourses north of the Cosumnes River and were heavily dependent upon fish and acorns for subsistence. Hill and mountain Nisenan villages were on ridges adjacent to streams with a southern exposure or on terraces along rivers. Most Hill and mountain Nisenan villages had bedrock mortar grinding stations associated with them (Yuba County 1994). Maidu villages occupied knolls, terraces, and crests along drainages of the

Feather and American Rivers. The northeastern Maidu occupied the upper reaches of the North and Middle Forks of the Feather River (Kroeber 1925).

- The Konkow, also known as Northwestern Maidu, occupied territory below the high Sierra in the foothills where the south, middle, north, and west branches of the Feather River converge. Konkow territory included the upper Butte and Chico Creeks and part in the Sacramento Valley along the lower courses of the same streams (Kroeber 1925).
- Sierra Miwok territory extended over the Sierra Nevada foothills in the central part of California.

The climate and topography north of the Delta area supports a variety of forest, grassland, savannah, riparian, and wetland habitats. Native American groups that occupied the Yuba, American, and Feather River drainages survived on non-domesticated plants and animals that provided food and material for baskets, houses, and clothing. For generations, Native Californians created baskets from willows, sedge root, bulrush root and new shoots of the western redbud.

Some modern Native Americans maintain their culture by gathering vegetation and wildlife formerly used by their ancestors and performing traditional ceremonies. U.S. Forest Service policy encourages, protects, and perpetuates traditional tribal practices by reserving areas on Forest Service land for gathering basketry materials and practicing cultural traditions.

Historic properties include prehistoric and historic districts, sites, buildings, structures, or objects included in, or eligible for inclusion in, the NRHP [36CFR800.16(l)(1)]. Historic age cultural resources in the upstream region include those associated with California's gold rush, such as mining machinery, sluices, cabins, and mills. Other historic sites include those pertaining to cattle ranches and wagon trains.

The following sections provide information on traditional cultural properties, historic properties and ethnographic resources in the Upstream from the Delta Region. This discussion is organized by river, and lists for each river area: early human and Native American groups that lived in the area; cultural surveys performed at locations of archeological interest; and number and nature of sites of cultural or historical importance.

#### **17.1.2.1 Feather River**

The Maidu occupied areas near the Feather River headwaters, and Nisenan lived in the downstream areas south of the Middle Fork of the Feather River. Traditional cultural practices of the Maidu and Nisenan include weaving baskets and tule mats. Maidu and Nisenan would coil peeled willow and peeled and unpeeled redbud in a clockwise manner to form baskets. Baskets were made to hold water by overlaying hazel shoots, pine roots, and maidenhair fern shoots and covering with pitch

(Schwartz 1958). Maidu also wove tule mats that they used for seats, beds, camp roofing, and doors (Kroeber 1925).

Historical landmarks are sites, buildings, features, or events of statewide significance that have anthropological, cultural, military, political, architectural, economic, scientific, or technical, religious, experimental, or other value (Office of Historic Preservation 2002). Upstream historic landmarks include gold mining sites of Dogtown, Nugget and Oregon City, along with the original propagation site of the Thompson seedless grape. Oroville Lake now covers Bidwell's Bar, the second county seat of Butte County. Another area of historical importance is an 1863 Chinese Temple commissioned by the Emperor and Empress of China. There are eight historical landmarks in Butte County (location of Sly Creek Reservoir) and thirteen in Plumas County (location of Little Grass Valley Reservoir).

Little Grass Valley and Sly Creek Reservoirs are upstream of Lake Oroville on the Feather River. Both reservoirs are in areas considered highly sensitive for prehistoric, protohistoric, and/or historic cultural resources (Ledwith, L. and Frank Bayham 2002).

#### **17.1.2.1.1 Little Grass Valley Reservoir**

Surveys for cultural resources exist for the northern half of Little Grass Valley Reservoir. Surveyed areas also include about half of the southern portion, private land along the southern edge, a small peninsula, and the southeastern side. Eleven Native American sites exist along the banks of the reservoir. The majority of the sites are prehistoric lithic scatters (flaked stone debris). The sites around Little Grass Valley Reservoir include two possible Martis Complex occupation sites and several bedrock milling stations. One site, described as a Martis Campsite, is inundated by the reservoir. The Martis Complex is a culture that precedes the advent of the bow and arrow (Yuba County 1994). Two additional sites have not yet been formally recorded, but they are a lithic scatter and a prehistoric basalt quarry.

One historic site and ten prehistoric sites have been recorded within the Little Grass Valley Reservoir boundaries. One site within the area of potential effect contains both historic and prehistoric remains. Two historic mining complexes with mining machinery and refuse are about ½ mile away from the reservoir and are outside of the area of potential effect. Eight studies by various individuals contain the breadth of information on this reservoir. (Carter 1978; Day 1982; Davis 1982; Lowdermilk 1989; Peterson 1993; Steidl 1993; Peterson 1994; Whittier 1999).

#### **17.1.2.1.2 Sly Creek Reservoir**

Much of the land around Sly Creek Reservoir is privately owned and not fully inventoried; however, three recorded prehistoric sites are known within the reservoir. One site is a campsite, and the other two are possible bedrock mortars where Native Americans processed acorns and other foods. One of the sites is now submerged in

Sly Creek Reservoir. (Manning 1981; Helm 1999; Murphy 1981; Day 1981; Manning 1981; and Lopez 1989).

### **17.1.2.2 Yuba River**

Maidu and Nisenan occupied the Yuba River Region. These groups practiced the same ethnographic life ways as those stated above.

#### **17.1.2.2.1 New Bullards Bar Reservoir**

Investigation of the area around New Bullards Bar Reservoir, which is on the North Fork of the Yuba River, revealed prehistoric evidence of the Northwestern Maidu settlements and earlier distinct Mesilla and Martis cultural complexes. The east side of New Bullards Bar Reservoir, which experienced a recent fire, was subject to an intense pedestrian survey of cultural resources; inventories of the reservoir's west side are few. The reservoir contains 12 recorded prehistoric sites, two of which are also historic sites. Ten of the sites are inundated. Nine studies comprise the body of literature pertaining to the area within reservoir boundaries. (Riddell and Olsen 1966; Humphreys 1969; Anonymous 1979; Budy 1976; Meals 1978; Deal 1980; Stevens 1982; O'Halloran 1992; Baldrice 2000).

Seven California Historical Landmarks exist in Yuba County. Landmarks include the Bok Kai Temple that commemorates the original site of an 1850s Chinese temple and the temporary detention camp for Japanese-Americans in Marysville. Additional historic properties include the settlements of Smartsville and Johnson's Ranch (CERES 2002).

### **17.1.2.3 American River**

The southern Maidu or Nisenan inhabited the upper and lower reaches of the American River watershed and practiced relatively the same cultural traditions and basketry production, as their northern tribal family. Prehistoric sites on the upper reaches of the American River include midden deposits (loose, dark soil with organic debris containing burned food, charcoal, bone, and rock), lithic scatters, petroglyphs, settlements with house pits, rock shelters, and bedrock mortars. These sites were large and small villages, cemeteries, resource procurement and processing, quarries, and ceremonial sites, workshops, and temporary campsites. Prehistoric archeological sites exist throughout the region, except on extremely rugged terrain and in areas without water. Most prehistoric sites of cultural interest in the area are found on gentle to moderately sloping sites within 500 feet of surface water sources (Placer County 1994).

Twenty California Historical Landmarks exist in Placer County, but few early gold rush buildings remain because miners and immigrants generally lived outdoors in cloth tents. Historic gold mining sites include an abandoned kiln in the middle of the Black Oak Golf Course and the Sisley mine industrial mill outside Penryn. Additional historic properties include Stanford Ranch north of Roseville and numerous small Depression-era concrete bridges built by laborers from the Work Projects Administration (Placer County 1994).

French Meadows and Hell Hole Reservoirs are along the Middle Fork of the American River. EWA agencies propose using these reservoirs for purchase of stored reservoir water.

#### **17.1.2.3.1 Hell Hole Reservoir**

The area within the Hell Hole Reservoir has not been surveyed extensively; four surveys cover the area within ½ mile of the reservoir. One prehistoric site is recorded to be within ½ mile of the reservoir. Three studies constitute the body of literature that applies directly to Hell Hole Reservoir (Peterson et al 1993; Lasick 1997; Goddard 1985).

#### **17.1.2.3.2 French Meadows Reservoir**

Surveys for cultural and historic resources exist for approximately 99 percent of French Meadows Reservoir and identify only a few sites within ½ mile of the project area. 1953 topographic maps reveal that there may be some unrecorded historic resources that are now under water. One archeological study identified a small “campsite” at the upper end of the reservoir (Shapiro and Jackson 1994). Six studies comprise the breadth of information written on French Meadows (Miller 1990; Smith 1978; Demasi 1981; Baldrice 1989; Smith 1994; Brooke 1999).

### **17.1.3 Delta Region**

The Delta Region is one of the most intensely investigated areas of California because of its high prehistoric population density and proximity to population centers. Although the bulk of sites were recorded prior to 1960, there has been little systematic inventory for cultural resources. Most of the early archeological work in the region focuses on prominent prehistoric mounds. Documentation of historic sites has largely occurred within the last 20-30 years.

Native Americans in the Delta at the time of European contact were Northern Valley Yokuts who were settled along the San Joaquin River. Plains Miwok people lived primarily in the north with territory extending nearly to Sacramento (DWR, Reclamation 1996). Wintun and Nisenan occupied areas on the north and northeastern Delta. Those in the south Delta proper were the Chulamni or Nochochomne.

Many cultural resources exist within the Delta region, as described in Section 7.11 of the CALFED PEIS/EIR. Because EWA water acquisitions would not affect cultural resources in the Delta, no further description of cultural resources or historic properties is included here.

### **17.1.4 Export Service Area**

The original inhabitants of the Export Service Area include the Yokuts and the Costanoans. The Costanoans claimed the coastal region from the southern border of San Francisco Bay south to Point Sur; descendants of the Costanoans currently refer to themselves as Ohlone.

The Ohlone lived in autonomous triblets each with a permanent village surrounded by a number of temporary camps. Poles, brush, and tule matting formed their dwellings. Tule also formed their rafts, the only boat known to Costanoans (Kroeber 1925, p. 468). Little is known of Costanoan basketry.

The Yokuts once occupied nearly all of the Tulare Basin, as well as portions of the Sierra Nevada foothills south of the Fresno River. The Yokuts had three main divisions – Northern Valley, Southern Valley, and Foothill. Each division comprised sixty triblets, and each triblet contained from a few hundred to several thousand individuals. Traditional land of the Northern Valley Yokuts spanned the junction of Bear Creek and San Joaquin River to the north, south nearly to Fresno, the Diablo Range to the west, and the western Sierra Nevada foothills to the east. Traditional land of the Southern Valley Yokuts spanned the Tulare, Buena Vista, and Kern lakes, their connecting sloughs, and lower portions of Kings, Kaweah, Tule, and Kern rivers (Merced County 2001).

The Yokuts efficiently incorporated tule into tribal life. Tule or bulrush, an emergent, grows most abundantly in muddy substrates found along the shores of shallow lakes, ponds, sloughs, and marshes. Tribal members incorporated tule into their permanent dwellings, which they often built in a street-like setting. Yokuts also used bundles of tule for their canoes.

Coiled jar-like vessels with flat shoulders and constricted necks are distinguishing characteristics of Yokuts' basketry. Red and black bands of either diamonds or hexagons mark the traditional Yokuts basket pattern (Kroeber 1925).

The following discussion describes cultural resources near reservoirs proposed for source shifting (Anderson Reservoir Lake Mathews, Castaic Lake, Lake Perris, and Diamond Valley).

#### **17.1.4.1 Anderson Reservoir**

Anderson Reservoir is located on a fault zone approximately two miles northeast of Morgan Hill in the Mt. Hamilton foothills. This reservoir operates in series with Coyote Reservoir to minimize pressure along the Calaveras fault. Anderson Reservoir was designed to handle a capacity of 89,073 acre-feet of water.

Artifacts reveal that a hunter/gatherer group called the Costanoans inhabited the region between 5000 and 7000 years ago. The Costanoans, currently known as the Ohlone, depended upon acorns, land animals, and marine resources for their subsistence.

During the Mexican Period (1821-1848) the fertile land was sold in 500-acre lots to Euro-American settlers. The reservoir currently covers one such 500-acre plot and resides within the Anderson Lake County Park. One of the features of the park is the Jackson Ranch Historic park site (Santa Clara Valley Water District 2001)

#### **17.1.4.2 Castaic Lake**

Castaic Lake is a 324,000 acre-foot reservoir. Reservoir levels generally peak in March and decrease until reaching a low in October. The design for Castaic Lake Reservoir accommodates surface elevation fluctuations of 90 feet (Young 2002).

Few early and middle period prehistoric archeological sites have been reported in the vicinity of Castaic Lake. (Horne 2002). Native American groups that inhabited the region include the Tataviam and the Gabrielino. The Tataviam heavily relied on yucca, and the Gabrielino exploited a wide range of marine resources. Gabrielino basketry is similar to that described for the Cahuilla (Kroeber 1925, p. 628)

Historic remnants of the gold and copper era, oil boom, Union Pacific Railroad, and archeological evidence of the Chinese labor camp era remain (Scientific Resource Surveys, Inc. 1988).

#### **17.1.4.3 Lake Mathews**

Lake Mathews is located just 60 miles from downtown Los Angeles in Riverside County. Lake Mathews is a 182,000 acre-foot reservoir that receives water from the Colorado River through Lake Havasu. Surface water elevations in Lake Mathews generally peak in May or June and reach their lowest during the late fall.

Lake Mathews is located near the westernmost extent of traditional Cahuilla territory. Other tribes occupying the region include the Serrano and Luiseno (Applied EarthWorks, Inc. 2002). An area about twenty miles east of Lake Mathews contains deeply stratified cultural deposits composed of a few flaked stone tools and abundant faunal remains (Applied EarthWorks, Inc. January 2002).

The Cahuilla baskets were rather heavy, regularly coiled bundles of grass stems. At times sumac splints or *Juncos* rush wrapped the baskets (Kroeber 1925, p. 698, 651). Luiseno basketry took on similar form.

#### **17.1.4.4 Lake Perris**

Lake Perris is a 131,000 acre-foot reservoir in Riverside County. Lake Perris occupies the historic home of the Indian tribes of Cahuilla, Serrano, and Luiseno (basketry described above). An archeological survey performed for Lake Perris found residential base camps and temporary camps “almost everywhere suitable milling surfaces are afforded by outcrops of granitic bedrock.” The sites appear to have been temporary and able to produce little or no survivable residues (Scientific Resource Surveys, Inc. 1988).

A records search indicated 46 prehistoric archeological sites within 1 mile of the Lake Perris area. Of the 46 sites, six are classified as residential bases, four as temporary field camps, 31 as resource acquisition sites, and four as isolated cultural features. Excavations exposed circular rock hearths, earthen ovens, cobble scatters, bedrock

mortars, grinding slicks, and stone stools such as scrapers, perforators, and drills. (Scientific Resource Surveys, Inc. 1988).

Historically, Lake Perris was part of the Spanish Rancho called the San Jacinto Nuevov Potrero. Prior to 1880, a few Mexican and Spanish miners worked the gold deposits in the surrounding hills. Following construction of the California Southern Railroad in 1881, settlers began staking out homesteads on railroad land. Although Perris Valley has a rich history, there are no properties within the Lake Perris area that are listed on the National Register of Historic Places, the California Historical Landmarks, the California inventory of Historic Resources, or at the Riverside County Parks Department Historical Section. A review of the 1898 USGS Elsinore Quadrangle indicates that 12 early 20<sup>th</sup> Century homesites were in existence at the time of mapping (Scientific Resource Surveys, Inc. 1988).

#### **17.1.4.5 Diamond Valley Lake**

When full, Diamond Valley Lake Reservoir is an 800,000 acre-foot reservoir that recently filled in December 2000 and became fully operational in January 2003. Construction of the Diamond Valley dam uncovered artifacts from the valley's human inhabitants, as well as fossils of prehistoric animals such as mammoth, mastodons, and giant long-horned bison. Several thousand fossils and the largest mastodon known in the west were unearthed (Metropolitan Water District 1991).

Archeological surveys for Diamond Valley Lake Reservoir identified 305 prehistoric archeological sites within the reservoir project area (Metropolitan Water District of Southern California 2001). Sites include: stone quarries, where prehistoric people procured quartz, quartzites, and metasiltstones for stone tool manufacture or flaked and ground stone; artifact scatters; and bedrock outcrops used for grinding and pounding plant foods.

Large prehistoric villages were found adjacent to major creeks and springs in Diamond valley. These villages contain circular rock rings, which are likely remnants of house structures, small rock enclosures, rock acorn granaries, bedrock grinding stations, fire hearths, and roasting platforms. Sites also contain a wide variety of flaked stone tools, such as dart points and arrow tips, bifacial knives, drills, scrapers, and choppers. Artifacts in the vicinity include bone awls, needles, clay pipes, pottery vessels, and abundant animal bones. Radiocarbon dating indicates that the people inhabited the area for the past 8,000 to 9,000 years, and the most intensive period of prehistoric occupation appears to have been within the past 500-700 years (McDougall June 2002).

## **17.2 Environmental Consequences/Environmental Impacts**

### **17.2.1 Assessment Methods**

The proposed action constitutes a Federal undertaking that requires compliance with Section 106 of the National Historic Preservation Act [16 USC 470(f)]; therefore, Federal significance criteria apply. For projects deemed undertakings, cultural

resource significance is evaluated in terms of eligibility for listing in the NRHP. NRHP criteria for eligibility are defined as follows:

The quality of significance in American history, architecture, archeology, and culture is present in districts, sites, buildings, structures, and objects of State and local importance that possess integrity of location, design, setting, materials, workmanship, feeling and association, and that:

- (a) are associated with events that have made a contribution to the broad pattern of our history;
- (b) are associated with the lives of people significant in our past;
- (c) embody the distinct characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- (d) have yielded, or are likely to yield, information important in prehistory or history (36 CFR 60.4).

Identifying and mitigating cultural resources eligible or listed on the National Register of Historic Places, California Register of Historical Resources, and/or unique archeological resources involves the following process:

1. Incorporate by reference the existing conditions defined within the CALFED PEIS/EIR. (The CALFED PEIS/EIR provides an adequate definition of cultural resources for performing a preliminary analysis on the areas potentially affected by EWA acquisition options.)
2. In consultation with State Historic Preservation Officer (SHPO) or the Tribal Historic Preservation Officer (THPO), determine the area of potential effect (APE) of EWA acquisitions. The APE is influenced by the scale and nature of the water transfer and would correspond to surface elevations that exceed the historic lower bounds of normal operational levels.
3. Review existing information on cultural resources within the area to identify whether historic properties are present within the APE.
4. Seek information from consulting parties, organizations, tribes, and individuals that have knowledge of the area's cultural resources and/or properties with religious and cultural significance. EWA agencies will exert a reasonable and good faith effort in identifying cultural resources within the APE.

5. In consultation with SHPO/THPO evaluate the eligibility of cultural resources, traditional cultural properties, and unique archeological resources by applying qualifications and guidance associated with the National Register of Historic Places, California Register of Historical Resources, and California Public Resources Code 21083.2(g).
6. In consultation with SHPO/THPO determine whether there are potential adverse effects that diminish the integrity of the historic properties location, setting, feeling, or association [36CFR800.5(a)(1)] or renders a substantial adverse change to the significance of a historic resource [CEQA 15064.5(b)].
7. When effects on historic properties cannot be fully determined prior to approval of the water transfer, development of a Programmatic Agreement (PA) is appropriate.
8. In consultation with SHPO/THPO develop a PA that implements measures to mitigate the project's effects on historic properties and unique archeological resources. Mitigation measures would be consistent with Federal and State law and regulation as appropriate, Reclamation's Directives and Standards (LND02-01), the Secretary of Interior's Standards, and 36 CFR 800. Mitigation measures would be developed in consultation with the SHPO/THPO, the Advisory Council on Historic Preservation, affected tribes, and interested parties.

Impact assessment focuses on historic properties, or sites designated as either historic resources or unique archeological resources.<sup>3</sup> Under State law, the evaluation of impacts on historic resources parallels Federal law. Properties protected under the California Environmental Quality Act (CEQA) include those eligible for listing or listed in the California Register of Historical Resources. The CEQA Guidelines state that if a project follows the Secretary of Interior's Standards for the Treatment of Historic Properties, the impacts are considered "mitigated to a level of less than a significant impact" (CEQA 15064.5[b][3]).

The EWA would include acquisition of water through the purchase of stored reservoir water from French Meadows, Hell Hole, New Bullards Bar, Little Grass Valley, and Sly Creek reservoirs. Stored reservoir water acquisition has the potential to affect cultural resources, if acquisitions result in changing operations beyond the normal range. Reservoir surface water elevation changes could expose previously inundated cultural resources to vandalism and/or increased wave action and erosion. These reservoirs are within three national forests: the Plumas, Eldorado, and Tahoe. Each forest is subdivided into several forest districts that retain their own cultural information. A records search performed by the Native American Heritage Commission did not identify any sites on the Sacred Lands Inventory List.

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<sup>3</sup> As defined either in 36 Code of Federal Regulations (CFR) 800.16(l) for federal actions or in the State CEQA Public Resources Code (PRC) (21084.1 and 21083.2) and the CEQA Guidelines (15064.5[a])

The North Central Information Center (NCIC) and Northeast Central Information Centers (NEIC) are the State cultural resource information repositories for these reservoirs. The U.S.D.A. Forest Service maintains its own records. Each information center was provided USGS 7.5 minute topographic quadrangle maps delineating the reservoirs. The information centers provided existing prehistoric, historic, and archeological information from their archives. The Native American Heritage Commission noted that no locations of Native American cultural resources existed in the reservoir areas (Pilas-Treadway 2002).

Sources of NCIC information include the following:

- Office of Historic Preservation (OHP) Historic Property Directory;
- NCIC Resources Map;
- California Inventory (1976);
- California Department of Transportation Bridge Inventory (2000);
- California Historical Landmarks (1996);
- Points of Historical Interest (1992); and
- Historic Spots of California (1990).

NEIC literature included the information above and the following:

- National Register of Historic Places-Listed Properties and Determined Eligible Properties (1988, computer lists 1966 through 7-00 by National Park Service);
- California Register of Historic Resources (2002);
- Directory of Properties in the Historic Property Data File for Butte and Plumas Counties (2002);
- California Points of Historical Interest (1992);
- California Inventory of Historic Resources (1976);
- Historic Spots in California (1966); and
- Gold Districts of California (1970).

As the need arises, all available cultural information and reservoir surface elevation changes will be discussed with the SHPO to determine whether previous surveys adequately characterize cultural resources within the reservoirs, or whether data gaps exist. Since effects on cultural resources cannot be fully determined, a PA ((36 CFR 800.14(b)) will be completed to comply with NHPA Section 106. The PA may include land managing agencies, tribal entities, other interested parties as signatory, or concurring parties as appropriate.

The jurisdiction of applicable State and Federal laws that protect archeological and historical sites is contingent on several factors. Federal law applies to all Federal lands and to all projects sponsored, permitted, approved, or funded by Federal agencies. Private entities or State agencies receiving Federal funds for projects are required to comply with Federal law. State law applies to State agencies, city governments, or private entities implementing CALFED projects on private or State lands. The applicable laws are discussed in Chapter 1 of this document and in Section 7.11.4 of the CALFED PEIS/EIR.

## **17.2.2 Significance Criteria**

Minor, moderate, or major effects on historic properties are potentially significant. Significant effects on important cultural resources require avoidance, mitigation measures, or consideration of alternative plans. The cultural resource effects assessment relies on the type of site, the type of effect, and the extent of the disturbance on historic properties (36 CFR 800.16(l)(1) or unique archeological resources (PRC Section 21083.2[g] and Section 21084.1). Direct effects are those that occur during program operations, such as reservoir surface elevation fluctuations that expose historic properties or increase the potential for their erosion.

Potentially significant adverse effects also can occur indirectly through the alteration of the character of the site setting and the introduction of visual, audible, or atmospheric elements that change the character of a site or its setting, which may affect the eligibility of the site for inclusion in the NRHP.

Significant impacts would be determined when operations:

- Expose previously submerged resources, increasing their vulnerability to vandalism and other factors; and
- Expose resources to increased cycles of inundation (erosion) and drawdown.

Studies of reservoir effects on cultural sites have shown that the greatest potential effects are from wave action, which erodes deposits and moves artifacts, and from cycles of inundation and drawdown, which also cause erosion and movement, in addition to repeated wetting and drying of the deposit (Foster, Bingham, Cart, Cooley-Reynolds, and Kelly 1977; Foster and Bingham 1978). The same authors suggest that sites that lie submerged permanently (e.g., within the deep pool of a reservoir), suffer much less damage than those within the drawdown zone. Sites at the present waterline (and that have not been subject to inundation before) would incur an adverse effect should water levels fluctuate.

## **17.2.3 Environmental Measures Incorporated into the Project Description**

The following environmental measures are incorporated into the project description to reduce the EWA's potential effects on historic properties and unique archeological resources. Consistent with the NHPA, Reclamation will consult with SHPO and/or

THPO in identifying cultural resources in the area of potential effect and in identifying appropriate mitigation measures.

Acquisition of stored reservoir water from French Meadows, Hell Hole, New Bullards Bar, Little Grass Valley, and Sly Creek reservoirs that results in drawdown beyond baseline (historic) surface elevations exposing areas that have been unsurveyed for cultural resources would require further inventory and evaluation. Before completion of water acquisition contracts, consideration of cultural resources within the new drawdown zone would proceed as follows:

- Reclamation would forecast end of season reservoir levels to determine whether levels would exceed the normal historic operating range.
- If forecasts exceed historic operational water surface elevations, then Reclamation would request the transferring irrigation district or water agency to inventory and evaluate cultural resources within the added drawdown zone at end of season low points.
- Should the willing seller not agree to an inventory and evaluation of cultural resources, the transaction would proceed no further.

Historic lower bounds of surface elevations in each reservoir proposed for purchase of stored reservoir water are contained in Table 17-1. Provisions for exceeding these levels are contained within the Programmatic Agreement (36 CFR 800.14(b)) developed between Reclamation, SHPO, and other appropriate agencies.

Reservoir	Historic end of month surface elevation feet mean sea level	Date Recorded
Little Grass Valley	3,462 feet	January 1985 <sup>(1)</sup>
Sly Creek	3,355 feet	October 1976 <sup>(2)</sup>
New Bullards Bar	1,711 feet	December 1980 <sup>(1)</sup>
Hell Hole	4,416 feet	September 2001 <sup>(1)</sup>
French Meadows	5,158 feet	October 1991 <sup>(1)</sup>

Elevations do not reflect reservoir filling or levels associated with emptying for reservoir repair.

<sup>(1)</sup> CDEC 2002

<sup>(2)</sup> Petersen 2002

#### **17.2.4 Environmental Consequences/Environmental Impacts of the No Action/No Project Alternative**

The analysis of cultural resources during the Stage 1 phase of CALFED plan implementation shows that the current practices would remain constant over the assessment period. In the No Action/No Project Alternative, surface water facilities

would continue to operate in the same manner as current operations, which would continue to inundate and expose cultural resources located within regularly exposed drawdown zones. The U.S. Forest Service would continue to manage and protect cultural resources associated with reservoirs on Forest Service property. Extreme seasonal changes in riverflows (e.g., floods flow that preclude access; droughts that diminish stream bank vegetation) could interfere with Native American cultural practices on Forest Service property in the same frequency as today. Other than in these extreme conditions, the No Action/No Project Alternative would have no effect on cultural resources or Native American traditional practices.

Water and irrigation districts would continue to operate their systems as in the Affected Environment, where they frequently move water between facilities. Cultural resources would be subject to current effects, and the No Action/No Project Alternative would reflect the system it is presently operating.

The National Environmental Policy Act (NEPA) basis of comparison is the Future Conditions Without the Project. As described in the above paragraphs, the Affected Environment and the Future Conditions Without the Project are the same; therefore, they are collectively referred to as the Baseline Condition in the following sections.

## **17.2.5 Environmental Consequences/Environmental Impacts of the Flexible Purchase Alternative**

The Flexible Purchase Alternative allows transfers up to 600,000 acre-feet and does not specify transfer limits in the Upstream from the Delta Region or the Export Service Area. Transfers in the Upstream from the Delta Region would range from 50,000 to 600,000 acre-feet. Hydrologic conditions and conveyance capacity through the Delta limit actual acquisitions. This section discusses the maximum transfer of stored reservoir water. Similarly, the evaluation includes an analysis of up to 540,000 acre-feet in the Export Service Area to cover the maximum transfer scenario for that region.

Negotiations for stored reservoir water with Placer County WA, Yuba County Water Agency (WA), and Oroville-Wyandotte Irrigation District (ID) are based on a number of factors, including price, water availability, and location. Based on need and hydrologic conditions, these factors change from year to year; therefore, EWA Project Agencies may choose to vary acquisition strategy annually. With the intent of providing the EWA Project Agencies the greatest flexibility when negotiating transfers with willing sellers, the following text describes the extent of impact potentially produced by maximum acquisition of stored reservoir water.

### **17.2.5.1 Upstream from the Delta**

Upstream asset acquisitions that could affect cultural resources are limited to purchase of stored reservoir water from reservoirs along the Feather, Yuba, and American Rivers.

#### 17.2.5.1.1 Feather River

*EWA acquisition of Oroville-Wyandotte ID stored reservoir water would decrease surface water elevations October until refill for Sly Creek and Little Grass Valley Reservoirs. An initial 15,000 acre-foot transfer would likely draw between 10,000-12,000 acre-feet from Little Grass Valley Reservoir and between 3,000-5,000 acre-feet from Sly Creek Reservoir (Petersen 2002).*

#### Little Grass Valley Reservoir

A 12,000 acre-foot withdrawal from Little Grass Valley Reservoir would result in a maximum decrease of 12 feet in surface elevation relative to baseline levels (represented by median monthly elevations over 40 years). Median surface elevations are the level at which 50% of the surface elevations are above and 50% are below that level. If hydrologic conditions result in elevations that fall below the median, the historically low surface elevation defines the lower bound limit of reservoir operations.

Oroville-Wyandotte ID maintains an average 48,000 acre-foot carryover storage in Little Grass Valley resulting in a baseline surface elevation of 5013 ft. Historic end of month surface elevations of Little Grass Valley range from 3,462 feet (January 1985) to 5,051 feet (May 1995) (California Data Exchange Center 2002). The decreased surface elevations could increase exposure of the 11 sites along the banks of Little Grass Valley Reservoir, yet would not bring attention to their locations nor subject them to additional wave action or erosion beyond naturally occurring reservoir fluctuations. Transfers that draw down surface elevations beyond historically low levels would result in a potentially significant effect. In such cases, Reclamation would require an inventory and evaluation of unsurveyed areas. Furthermore, Reclamation would consult with SHPO to identify appropriate mitigation measures that are found in Section 17.2.8, in accordance with the PA. Project proponents would coordinate cultural resource mitigation measures (Section 17.2.8) with Reclamation to reduce effects to less-than-significant levels.

#### Sly Creek Reservoir

A 5,000 acre-foot reduction of Sly Creek Reservoir would result in a maximum decrease of 17 feet of surface elevation relative to the Baseline Condition. Oroville-Wyandotte ID maintains an average 12,000 acre-foot carryover storage in Sly Creek results in a baseline surface elevation of 3,450 ft. Historic end of month surface elevations in Sly Creek range from 3,355 ft (October 1976) (Petersen 2002) to 3,539 feet (June 1978) (California Data Exchange Center 2002). The decreased surface levels could increase exposure of three sites in Sly Creek Reservoir, yet would not bring attention to their locations nor subject them to additional wave action or erosion beyond naturally occurring reservoir fluctuations. Transfers that draw down surface elevations beyond historically low levels would result in a potentially significant effect. In such cases, Reclamation would require inventory and evaluation of

unsurveyed areas. Furthermore, Reclamation would consult with SHPO to identify appropriate mitigation measures that are found in Section 17.2.8, in accordance with the PA. Project proponents and Reclamation would coordinate cultural resource mitigation measures to reduce effects to less-than-significant levels.

Surface elevations in these reservoirs are expected to refill in April, May, and June to within baseline parameters. The surface elevation fluctuations are potentially significant. Implementation of the mitigation measures described in Section 17.2.8 would reduce these effects to less-than-significant.

*EWA acquisition of Oroville-Wyandotte ID stored reservoir water would increase Feather River flows upstream from Lake Oroville from October through December, prior to transfer downstream, and would increase Feather River flows downstream from Lake Oroville from July to September. Flow releases would remain within historic channels and would not change the availability of or accessibility to resources pertinent to Native American cultural practices on U.S. Forest Service lands surrounding the Oroville-Wyandotte ID reservoirs and downstream reaches of the rivers. There are no significant effects associated with changes in flow patterns on the Feather River.*

Multi-year transfers of stored reservoir water are contingent on refill during winter months. If Little Grass Valley and Sly Creek reservoirs do not refill, then EWA agencies would not purchase water from Oroville-Wyandotte ID the following year. The same mitigation measures would apply to multi-year transfers to maintain effects to a less-than-significant level.

#### **17.2.5.1.2 Yuba River**

*EWA acquisition of Yuba County Water Agency (WA) stored reservoir water would decrease surface water elevations from July until refill for New Bullards Bar Reservoir. Yuba County WA would agree to water transfers only after local needs, instream flow requirements, and system demands are met. Given proper hydrologic conditions, however, the EWA could acquire up to 100,000 acre-feet of water from reservoir storage in New Bullards Bar Reservoir dropping the surface elevation 24 feet below baseline (represented by median monthly elevations over a 40 year study period). Median values are the level at which 50% of the surface elevations are above and 50% are below that value. If hydrologic conditions result in elevations that fall below the median, the historically low surface elevation defines the lower bound limit of reservoir operations.*

The reservoir's monthly surface elevations range from 1,711 ft (December 1980) to 1,966 ft (June 1982) (California Data Exchange Center 2002). The operational target storage for the end of September is 1,873 ft (705,000 acre-feet), when hydrologic conditions allow. Stored reservoir water transfers could expose the ten inundated sites, yet would not bring attention to their previously submerged locations or subject them to additional wave action or erosion beyond naturally occurring reservoir fluctuations. Transfers that draw down surface elevations beyond historically low levels would result in a potentially significant effect. In such cases, Reclamation would require inventory and evaluation of unsurveyed areas. Furthermore,

Reclamation would consult with SHPO to identify appropriate mitigation measures that are found in Section 17.2.8, in accordance with the PA. Reclamation and project proponents would coordinate cultural resource mitigation measures (Section 17.2.8) to reduce effects to less-than-significant levels.

Multi-year transfers of stored reservoir water with Yuba County WA are dependent upon refill during winter months. The amount of water available for transfer the second year would be dependent upon the amount the reservoir refills (Onken 2003). Before initiating multi-year transfers, Yuba County WA would evaluate and analyze potential effects on cultural resources and apply the same mitigation measures that pertain to single year transfers to maintain effects at a less-than-significant level.

*EWA acquisition of Yuba County WA stored reservoir water would increase flows on the Yuba River downstream from Englebright Dam from July to September. Release flows would remain within historic channels and flow ranges and would not affect availability of or accessibility to Native American cultural resources on U.S. Forest Service lands surrounding the New Bullards Bar Reservoir and the Yuba River downstream. There are no significant effects associated with changes in flow patterns on the Yuba River.*

#### **17.2.5.1.3 American River**

*EWA acquisition of Placer County WA stored reservoir water would decrease surface water elevations June to refill at Hell Hole and/or French Meadows reservoirs. The EWA agencies propose a 20,000 acre-foot acquisition of stored reservoir water in Hell Hole and French Meadows Reservoirs. Although the amount released from each reservoir would remain entirely at Placer County WA's discretion, this analysis assumes that 61 percent would be released from Hell Hole and the remainder from French Meadows. The acquisition would result in a 7,800 acre-foot reduction from French Meadows and a 12,200 acre-foot reduction from Hell Hole.*

#### Hell Hole Reservoir

Surface elevations of Hell Hole range from 4,416 ft (September 2001) to 5,654 ft (May 1996) (California Data Exchange Center 2002). Hell Hole has an average 91,500 acre-foot carryover storage. A 12,200 acre-foot acquisition could result in a 14-foot reduction from median monthly surface elevations.

#### French Meadows

Surface elevations of French Meadows range from 5,158 ft (October 1991) to 5,261 ft (June 1982) (California Data Exchange Center 2002). French Meadows maintains an average 58,500 acre-foot carryover storage. A 7,800 acre-foot purchase of stored reservoir water from French Meadows would result in an 8-foot reduction in surface elevation.

Though both reservoirs are largely unsurveyed, decreased surface elevations could expose cultural resources, including the “campsite” at the top of French Meadows reservoir, yet would not bring attention to their locations nor subject them to additional wave action or erosion beyond naturally occurring reservoir fluctuations. Effects are less-than-significant. Transfers that draw down surface elevations beyond historically low levels would result in a potentially significant effect. In such cases, Reclamation would require inventory and evaluation of unsurveyed areas. Furthermore, Reclamation would consult with SHPO to identify appropriate mitigation measures that are found in Section 17.2.8, per the PA. Reclamation and project proponents would coordinate cultural resource mitigation measures found in Section 17.2.8 to reduce effects to less-than-significant levels.

Multi-year transfers of stored reservoir water from Placer County WA will proceed for as long as both Hell Hole and French Meadows Reservoirs do not drop below a combined 50,000 acre-feet of storage. Before initiating multi-year transfers, Placer County WA would evaluate and analyze potential effects on cultural resources and apply the same mitigation measures that pertain to single year transfers to maintain effects at a less-than-significant level.

*EWA agencies acquisition of Placer County WA stored reservoir water would increase American River flows downstream from Ralston Afterbay to Folsom Lake from June to October. American River flows would decrease downstream from French Meadows to Folsom Lake during refill of Hell Hole and French Meadows reservoirs. Release flows would remain within historic channels and flow ranges. American River flows during reservoir refill are protected by instream flow requirements and power production requirements. There are no significant effects associated with changes in flow patterns on the American River.*

### **17.2.5.2 Export Service Area**

Source shifting and pre-delivery are the only operational tools that could involve cultural resources in the Export Service Area.

#### **17.2.5.2.1 Export Service Area Reservoirs**

##### Anderson Reservoir

*A Santa Clara Valley Water District 20,000 AF source shift would change the pattern of surface water elevation changes at Anderson Reservoir. Source shifting would delay deliveries of SWP water to Santa Clara Valley Water District, which would alternatively cause Santa Clara Valley Water District (SCVWD) to deliver water from the Anderson Reservoir. Surface elevations would decline earlier than the Baseline Condition and more frequently approach the lower levels of normal operational parameters. Fluctuations in reservoir elevations range between 558 ft (20 TAF) and 625 ft (89 TAF), which correspond respectively with the minimum emergency reserve and reservoir capacity. Because the water levels would be within historic levels, source shifting would not expose any additional cultural resources. Cultural resources*

would remain intact relative to the Baseline Condition; therefore, there would be no effects posed by EWA source shifting.

#### Castaic Lake

*A Metropolitan Water District (WD) source shift would change the pattern of surface water elevation changes at Castaic Lake.* Source shifting would delay deliveries of SWP water to Metropolitan WD, which could cause Metropolitan WD to use water from Castaic Lake. Although Metropolitan WD could exercise flexible storage rights in Castaic Lake to serve as an alternate water supply, Metropolitan WD has many other alternate supply sources, e.g., Lake Mathews, Hayfield Groundwater Storage, or it may reduce deliveries to Arvin-Edison Water Storage District (WSD) or Semitropic WSD. Alternatively, Metropolitan WD could change water blending strategies.

Use of Castaic Lake as an alternate supply source could cause surface water levels to decline earlier in the year than they would in the Baseline Condition and more frequently approach the lower levels of normal operational parameters. The changes in the pattern of surface elevations would remain within historic levels. Fluctuations of the reservoir range between their lowest in August 1984 (1,398 ft) and their highest in February 1986 (1,515 ft) (California Data Exchange Center 2002). Because the water levels would be within historic levels, source shifting would not expose any additional cultural resources. Cultural resources would remain intact relative to the Baseline Condition; therefore, there would be no effects posed by EWA source shifting.

#### Lake Perris

*A Metropolitan WD source shift would change the pattern of surface water elevation changes at Lake Perris.* Source shifting would delay deliveries of SWP water to Metropolitan WD, which could cause Metropolitan WD to use water from Lake Perris. Although Metropolitan WD could exercise flexible storage rights in Lake Perris that could serve as an alternate water supply, Metropolitan WD has multiple alternate supply sources (see above). Use of Lake Perris as an alternate supply source could cause surface water levels to decline earlier in the year than they would in the Baseline Condition, and surface elevations would more frequently approach the lower levels of normal operational parameters. The changes in the reservoir levels would remain within historic levels. Surface elevations in Lake Perris historically range from 1,564 ft msl (October 1977) to 1,588 ft msl (July 1999) (California Data Exchange Center 2002). Because the water levels would be within historic levels, source shifting would not expose any additional cultural resources. Cultural resources would remain intact relative to the Baseline Condition; therefore, there would be no effects posed by EWA source shifting.

### Diamond Valley Lake

Source shifting from Metropolitan WD would decrease surface water elevations at Diamond Valley Lake. Source shifting would delay deliveries of SWP water to Metropolitan WD. Diamond Valley Lake is one of many alternate water supply sources available to Metropolitan WD. If Metropolitan WD elects to use this reservoir, surface elevations would decrease earlier in the year than they would in the Baseline Condition, and surface elevations would more frequently approach the lower levels of projected normal operational parameters. Because this 800,000 acre-foot reservoir recently filled in December 2002 and was fully operational by January 2003, normal operational parameters have yet to be established. Average surface elevations in Diamond Valley Lake are projected to fluctuate approximately 42 feet, with an additional 30 feet in dry years. During the second year of a drought, reservoir surface elevations would be approximately 100 feet below maximum elevation. While filling, the cultural resources within the reservoir footprint experienced periods of exposure, inundation, drawdown, and erosion that were identified and mitigated in the environmental document pertaining to this reservoir. EWA source shifting effects are less-than-significant.

## **17.2.6 Environmental Consequences/Environmental Impacts of the Fixed Purchase Alternative**

The Fixed Purchase Alternative specifies purchases of 35,000 acre-feet in the Upstream from the Delta Region and 150,000 acre-feet from the Export Service Area. Cultural effects that would be less-than-significant for the Flexible Purchase Alternative would also be less-than-significant for the Fixed Purchase Alternative. These effects include:

- Increased surface elevations on non-Project reservoirs on the Feather, Yuba, and American Rivers.
- Increased flows on the Feather, Yuba, and American Rivers during release of stored reservoir water;
- Decreased flows on the Feather, Yuba, Rubicon, and Middle Fork of the American Rivers during refill of reservoirs;
- Decreasing reservoir elevations in Export Service Area reservoirs earlier in the season when compared to the Baseline Condition.

If transfers result in exceeding historically low elevations, then Reclamation would consult with SHPO and/or THPO and identify appropriate mitigation measures that would reduce effects to a less-than-significant level.

### **17.2.6.1 Upstream from the Delta Region**

#### **17.2.6.1.1 Feather River**

*EWA acquisition of Oroville-Wyandotte ID stored reservoir water would decrease surface water elevations October until refill for Sly Creek and Little Grass Valley reservoirs. An*

initial 15,000 acre-foot transfer would likely draw between 10,000 and 12,000 acre-feet from Little Grass Valley Reservoir and between 3,000 and 5,000 acre-feet from Sly Creek Reservoir (Petersen 2002). These amounts are the same as those described for the Flexible Purchase Alternative. Similar to the Flexible Purchase Alternative, the decreased surface levels could expose cultural resources, yet would not bring attention to their previously submerged locations nor submit them to increased weathering beyond historic reservoir fluctuations. Transfers that draw down surface elevations beyond historically low levels would result in a potentially significant effect. In such cases, Reclamation would require inventory and evaluation of unsurveyed areas. Furthermore, Reclamation would consult with SHPO to identify other appropriate mitigation measures. Reclamation and project proponents will discuss protective mitigation measures described in Section 17.2.8, per the PA, to maintain less-than-significant effects on cultural resources.

*EWA acquisition of Oroville-Wyandotte ID stored reservoir water would increase Feather River flows upstream from Lake Oroville from October through December, prior to transfer downstream, and would increase Feather River flows downstream from Lake Oroville from July to September.* The amount of water that would be transferred under the Flexible Purchase Alternative could be transferred under the Fixed Purchase Alternative. As stated above, there are no significant effects from decreased flows on the Feather River.

Multi-year transfers involving stored reservoir water with Oroville-Wyandotte Irrigation District are contingent on refill during winter months. If Little Grass Valley and Sly Creek reservoirs do not refill, then EWA agencies would not purchase water the following year. The same mitigation measures would apply to multi-year transfers to maintain effects at a less-than-significant level.

#### **17.2.6.1.2 Yuba River**

*EWA acquisition of Yuba County Water Agency (WA) stored reservoir water would decrease surface water elevations from July until refill for New Bullards Bar Reservoir.* EWA agencies could acquire a maximum 35,000 acre-foot transfer from New Bullards Bar Reservoir, dropping the surface elevation 8 feet below baseline. The reservoir's average monthly surface elevations range from 1758 ft (January 1981) and 1966 ft (June 1982) (California Data Exchange Center 2002). Decreased surface elevations could expose inundated sites, yet would not bring attention to their previously submerged site nor subject them to increased weathering beyond historic reservoir fluctuations. Transfers that draw down surface elevations beyond historically low levels would result in a potentially significant effect. In such cases, Reclamation would require inventory and evaluation of unsurveyed areas. Furthermore, Reclamation would consult with SHPO to identify appropriate mitigation measures that are found in Section 17.2.8, in accordance with the PA. Reclamation and project proponents would coordinate the implementation of mitigation measures to reduce effects to a less-than-significant level.

*EWA acquisition of Yuba County WA stored reservoir water would increase flows on the Yuba River downstream from Englebright Dam from July to September. The amount of water that would be transferred under the Flexible Purchase Alternative could be transferred under the Fixed Purchase Alternative. As stated above, there are no significant effects from decreased flows on the Yuba River.*

Multi-year transfers of stored reservoir water with Yuba County WA are dependent upon refill during winter months. The amount of water available for transfer the second year would be dependent upon the amount the reservoir refills (Onken 2003). Before initiating multi-year transfers, Yuba County WA would evaluate and analyze potential effects on cultural resources and apply the same mitigation measures that pertain to single year transfers to maintain effects at a less-than-significant level.

#### **17.2.6.1.3 American River**

*EWA acquisition of Placer County WA stored reservoir water would decrease surface water elevations June to refill at Hell Hole and/or French Meadows Reservoirs. The EWA agencies propose a maximum 20,000 acre-foot acquisition of excess stored reservoir water from Hell Hole and French Meadows Reservoirs. This amount is the same as described for the Flexible Purchase Alternative. Similar to the Flexible Purchase Alternative, decreased surface water elevations could expose cultural resources, yet would not bring attention to their previously submerged site nor subject them to increased weathering beyond historic reservoir fluctuations. Transfers that draw down surface elevations beyond historically low levels would result in a potentially significant effect. In such cases, Reclamation would require inventory and evaluation of unsurveyed areas. Furthermore, Reclamation would consult with SHPO to identify appropriate mitigation measures that are found in Section 17.2.8, in accordance with the PA. Project proponents and Reclamation would coordinate implementation and coordination of mitigation measures that would reduce effects to less-than-significant.*

*EWA agencies acquisition of Placer County WA stored reservoir water would increase American River flows downstream from Ralston Afterbay to Folsom Lake from June to October. American River flows would decrease downstream from French Meadows to Folsom Lake during refill of Hell Hole and French Meadows reservoirs. The amount of water that would be transferred under the Flexible Purchase Alternative could be transferred under the Fixed Purchase Alternative. As stated above, there are no significant effects from decreased flows on the American River.*

Multi-year transfers of stored reservoir water from Placer County WA will proceed for as long as both Hell Hole and French Meadows reservoirs do not drop below a combined 50,000 acre-feet of storage. Before initiating multi-year transfers, Placer County WA would evaluate and analyze potential effects on cultural resources and apply the same mitigation measures that pertain to single year transfers to maintain effects at a less-than-significant level.

#### **17.2.6.2 Export Service Area**

*A Metropolitan Water District (WD) source shift would change the pattern of surface water elevation changes at Castaic Lake, Diamond Valley Lake, and Lake Perris. The amount of*

water that would be transferred under the Flexible Purchase Alternative could be transferred under the Fixed Purchase Alternative. Metropolitan WD could elect to use all the reservoirs for source shifting. Surface elevations in all reservoirs would decrease earlier in the season than in the Baseline Condition and more frequently approach the lower levels of normal operational parameters; however, elevations would remain within historic parameters. Cultural resources would remain intact relative to the Baseline Condition; therefore, there would be no effects posed by EWA source shifting.

#### **17.2.6.2.1 Anderson Reservoir**

*A maximum 20,000 acre-foot Santa Clara Valley Water District source shift would change the pattern of surface water elevation changes at Anderson Reservoir. Source shifting would delay deliveries of SWP water to Santa Clara Valley Water District, which would alternatively cause SCVWD to deliver water from the Anderson Reservoir. Surface elevations would decline earlier than the Baseline Condition and more frequently approach the lower levels of operational parameters; however, surface elevations would remain within historic limits. Fluctuations in reservoir elevations range between 558 ft (20 TAF) and 626 ft (89 TAF), which correspond respectively to the minimum emergency reserve and reservoir capacity. Because the water levels would be within historic levels, source shifting would not expose any additional cultural resources. Cultural resources would remain intact relative to the Baseline Condition; therefore, there would be no effects posed by EWA source shifting.*

### **17.2.7 Comparative Analysis of Alternatives**

This section provides comparative effects analysis that would result from maximum stored reservoir water acquisitions. This addresses all possible effects, or a “worst-case scenario”, that would occur should all acquisitions happened in the same year. The approach provides the EWA Project Agencies the flexibility to choose transfers that may be preferable in a given year. EWA agencies, however, would not actually purchase all of this water in the same year. This section provides information about how EWA agencies would more likely operate in different year types.

During No Project conditions, cultural resources within the program reservoirs experience exposure, inundation, and erosion that correspond to surface elevation fluctuations. During dry periods and extreme drought, cultural resources may become exposed, but locations remain unknown and protected. Wet hydrologic conditions inundate cultural resources and protect them from exposure. Surface elevation variations between the two hydrologic extremes result in wave action that could cause natural erosion in the Baseline Condition. Surface elevation changes associated with hydrologic cycles are unpredictable and difficult to differentiate between the effects caused by natural fluctuations and reservoir operations that occur in the Baseline Condition.

In the Upstream from the Delta Region, the Fixed Purchase Alternative would be limited to a maximum 35,000 acre-foot acquisition from all sources of water. This

amount could typically be obtained from stored reservoir water purchases in most year types. During wet years New Bullards Bar could facilitate the entire 35,000 acre-foot acquisition of stored reservoir water, yet distributing the purchase between the other candidate reservoirs would reduce potential exposure of cultural resources in all reservoirs. In very dry years, stored reservoir water may not be available, and the EWA agencies would need to look to other sources such as crop idling.

The Flexible Purchase Alternative could involve a maximum 600,000 acre-foot purchase from all sources in the Upstream from the Delta Region. EWA agencies would prefer to purchase reservoir water because the water is generally less expensive. The amount that could be purchased would be limited by the available capacity of the Delta export pumps to move the water to export areas south of the Delta. During wet years, excess pump capacity may be limited to as little as 60,000 acre-feet of EWA asset water because the pumps primarily would be used to export State and Federal Project water to Export Service Area users. Wet year acquisitions would need to rely more on crop idling in the Export Service Area, which would decrease the risk of affecting cultural resources in the non-Project reservoirs.

During dry years when there would be greater Delta pump capacity, the EWA Project Agencies could acquire up to 600,000 acre-feet of water from all sources in the Upstream from the Delta Region. Extending the drawdown zone beyond the historic Baseline Condition during dry years is dependent upon the availability of the less expensive water; however, it is likely that EWA Project Agencies would depend more upon stored reservoir water during dry years. Mitigation measures that would reduce potential effects to a less- than-significant level are discussed in Section 17.2.8 and would be implemented if transfers would exceed historic lower bound reservoir levels. Table 17-2 compares the Flexible and Fixed Purchase Alternatives to the Baseline Condition.

**Table 17-2**  
**Comparison of Impacts on Cultural Resources for Flexible and Fixed Purchase Alternatives**

<b>Region</b>	<b>Sub-region</b>	<b>Asset Acquisition or Management</b>	<b>Result</b>	<b>Impacts</b>	<b>Flexible Alternative Change</b>	<b>Fixed Alternative Change</b>	<b>Significance of Flexible Alternative</b>	<b>Significance of Fixed Alternative</b>
Upstream from the Delta	Feather River	Stored Reservoir Water	Water released from Sly Creek and Little Grass Valley Reservoirs	Sly Creek and Grass Valley Reservoir levels decrease December until refill	Surface elevations in Sly Creek reduced by 17 feet and in Grass Valley surface by 12 feet	Surface elevations in Sly Creek reduced by 17 feet and in Grass Valley surface by 12 feet	Reservoir drawdown below historic elevations would be potentially significant. Appropriate mitigation measures produced through consultation would reduce effects to a less - than- significant level.	Reservoir drawdown below historic elevations would be potentially significant. Appropriate mitigation measures produced through consultation would reduce effects to a less - than- significant level.

**Table 17-2**  
**Comparison of Impacts on Cultural Resources for Flexible and Fixed Purchase Alternatives**

Region	Sub-region	Asset Acquisition or Management	Result	Impacts	Flexible Alternative Change	Fixed Alternative Change	Significance of Flexible Alternative	Significance of Fixed Alternative
				Seasonal flow changes increase upstream from Oroville October through December	Flows increase upstream from Oroville October through December, yet remain within historic channels	Flows increase upstream from Oroville October through December, yet remain within historic channels	No significant effect	No significant effect
				Seasonal flow changes increase downstream from Oroville July to September	Flows increase downstream from Oroville October through December, yet remain within historic channels	Flows increase downstream of Oroville October through December, yet remain within historic channels		
				Sly Creek and Little Grass Valley reservoirs refill	Seasonal flow changes decrease upstream and downstream of Oroville during refill of Sly Creek and Little Grass Valley	Feather River flows decrease during refill, and are protected by instream flow and power production requirements		
	Yuba River	Stored Reservoir Water	Water is released from New Bullards Bar	New Bullards Bar Reservoir levels decrease	Surface elevations in New Bullards Bar decrease up to 24 ft	Surface elevations in New Bullards Bar decrease up to 8 ft	Reservoir drawdown below historic elevations would be potentially significant. Appropriate mitigation measures produced through consultation would reduce effects to a less-than-significant level.	Reservoir drawdown below historic elevations would be potentially significant. Appropriate mitigation measures produced through consultation would reduce effects to a less-than-significant level.
				New Bullards Bar refills	Yuba River flows decrease	Yuba River flows decrease during refill, but flows are protected by instream flow and power production requirements	Yuba River flows decrease during refill, but flows are protected by instream flow and power production requirements	No significant effect

**Table 17-2**  
**Comparison of Impacts on Cultural Resources for Flexible and Fixed Purchase Alternatives**

<b>Region</b>	<b>Sub-region</b>	<b>Asset Acquisition or Management</b>	<b>Result</b>	<b>Impacts</b>	<b>Flexible Alternative Change</b>	<b>Fixed Alternative Change</b>	<b>Significance of Flexible Alternative</b>	<b>Significance of Fixed Alternative</b>
	American River	Stored Reservoir Water	Water is released from French Meadows and Hell Hole Reservoirs	French Meadows and Hell Hole Reservoir surface elevations decrease June until refill	Surface elevations decrease in French Meadows by 8 ft and in Hell Hole by 14 ft	Surface elevations decrease in French Meadows by 8 ft and in Hell Hole by 14 ft	Reservoir drawdown below historic elevations would be potentially significant. Appropriate mitigation measures produced through consultation would reduce effects to a less-than-significant level.	Reservoir drawdown below historic elevations would be potentially significant. Appropriate mitigation measures produced through consultation would reduce effects to a less-than-significant level.
			Water is released from French Meadows and Hell Hole Reservoirs	American River flows increase	Flows on American River increase June until October, yet flows remain within historic channels	Flows on American River increase June until October, yet flows remain within historic channels	No significant effect	No significant effect
			French Meadows and Hell Hole Reservoirs refill	Flows on the American River between French Meadows/Hell Hole Reservoirs and Folsom Lake are decreased during refill	Rubicon River flows decrease during refill of Hell Hole and flows on Middle Fork of American decrease during refill of French Meadows. Flows are protected by instream flow and power production requirements.	Rubicon River flows decrease during refill of Hell Hole and flows on Middle Fork of American River decrease during refill of French Meadows. Flows are protected by instream flow and power production requirements.	No significant effect	No significant effect
Export Service Area	Source Shifting	Source shifting in MWD reservoirs	Water is drawn from MWD reservoirs and from storage in SWP's Castaic Lake and Lake Perris	Transfers could change the pattern of surface water elevations	Maximum 200 TAF transfer could decrease surface elevations earlier in the year and more frequently approach the lower levels of normal operations	Maximum 200 TAF transfer could decrease surface elevations earlier in the year and more frequently approach the lower levels of normal operations	Less-than-significant effect	Less-than-significant effect
	Source Shifting	Source shifting in SCVWD reservoirs	Water is drawn from storage in Anderson Reservoir	Transfers could change the pattern of surface water elevations	Maximum 20,000 acre-foot transfer could decrease surface elevations earlier in the year and more frequently approach the lower levels of normal operations	Maximum 20,000 acre-foot transfer could decrease surface elevations earlier in the year and more frequently approach the lower levels of normal operations	Less-than-significant effect	Less-than-significant effect

## 17.2.8 Mitigation Measures

Stored reservoir water transfers from French Meadows, Hell Hole, New Bullards Bar, Little Grass Valley, and Sly Creek reservoirs could result in drawdown beyond historic operating levels and expose previously unsurveyed cultural resources. Stored reservoir water transfers that exceed the lower bounds of historic levels will require inventory and evaluation of unsurveyed areas. Consultation with SHPO would result in identifying appropriate mitigation measures that would reduce effects on cultural resources to a less-than-significant level.

Reclamation will forecast end of season reservoir levels to determine whether transfers would exceed normal historic operational levels and, where appropriate, transferring agencies would conduct inventory and evaluations of cultural resources in areas of potential effects. Appropriate mitigation measures would be identified in consultation with SHPO through the following process.

- If irrigation and water agencies proceed with cultural resource inventory and evaluation and find potential historic properties, a determination of effect document would be prepared.
- The results of the inventory, evaluation, and determination of effect would require Reclamation to consult through the PA with the SHPO, the U.S. Forest Service, other appropriate Federal and non-Federal agencies, and landowners (36 CFR 805.6) on the potential for adverse effects and to determine appropriate mitigation measures to historic properties. Mitigation measures included in the PA will comply with Section 106 of the National Historic Preservation Act.
- Historic property mitigation could involve research of historical records, previous cultural resources reports and data, and the detailed recording and/or excavation for data recovery. Additional measures may include protection or avoidance.

Impacts to resources covered under U.S. Forest Service's California Native American policy will require the EWA agencies to notify potentially affected Native Americans and to issue follow-up letters identifying potential impacts and appropriate mitigation measures.

## 17.2.9 Potentially Significant and Unavoidable Impacts

There are no expected significant and unavoidable effects on cultural resources. Mitigation measures (Section 17.2.8) would reduce potential effects to a less-than-significant level.

## 17.2.10 Cumulative Effects

Cumulative effects analysis for cultural resources focuses on those programs that potentially acquire water through stored reservoir water purchase and crop idling.

Other water acquisition programs include the Sacramento Valley Water Management Agreement, Dry Year Purchase Program, Drought Risk Reduction Investment Program (DRRIP), Central Valley Project Improvement Act Water Acquisition Program (WAP), and the Environmental Water Program. Although all programs include the option to purchase stored reservoir water during dry years, only the WAP and the Environmental Water Program would acquire reservoir water during wet years from upstream from the Delta reservoirs. The Environmental Water Program and the EWA would, however, purchase water from different facilities. Other future acquisition programs may also develop that adopt transactions involving stored reservoir water. All transfers that lower reservoirs could incrementally increase the drawdown zone to beyond the historic Baseline Condition. Cumulatively, this is a potentially significant effect. EWA agencies would mitigate EWA-produced effects to less-than-significant levels.

Mitigation would require cultural resource inventory and evaluation of property within the added drawdown zone and development of appropriate cultural resource protection. Cultural resource inventory and evaluation serve to adequately recover the scientifically consequential information from and about cultural resources, especially in terms of archeological resources. The intent of identifying potential archeological resources and historic properties is to identify appropriate mitigation measures that would avoid potential damage or destruction and reduce possible impacts to a less-than-significant level.

A cumulative effect would only be considered significant if the combined actions of all programs exceeded historic operational levels. In such conditions, the EWA would not contribute to a cumulative effect, as EWA agencies would not purchase water from an agency if the purchase would cause a cumulatively significant impact on cultural resources.

### 17.3 References

Anonymous. 1979. *Foster Bar Commercial Wood Timber Sale*. Ms. 05-11-17-79, on file at the Plumas National Forest Feather River District, Oroville.

Applied EarthWorks. 2001. *Metropolitan Water District's Eastside Reservoir Project (now known as Diamond Valley Lake Final Report of Archaeological Investigations), Vol. 1 Project Overview and Summary of Archaeological Investigations*. Hemet, California. Report prepared for Metropolitan Water District of Southern California. Chapters 3-5.

Applied EarthWorks. 2002. *Draft Report Cultural Resources Survey of the Lake Mathews Inundation Zone*. Hemet, California. Report prepared for Metropolitan Water District. Chapter 2.

Baldrice, M. 1989. *Star Gate Insect Salvage Sale*. Ms. 05-17-831, on file with the Tahoe National Forest, Forest Hill Ranger District, Forest Hill, California.

Baldrice, M. 2000. *Pendola Fire Salvage Timber Sale*. Ms. 05-17-1398, on file with the Tahoe National Forest Downieville Ranger District, Camptonville, California.

Brooke. 1999. *Small Hazard Timber Sale*. Ms. 05-17-1367, on file with the Tahoe National Forest, Forest Hill Ranger District, Forest Hill, California.

Budy. 1976. *Pepper Timber Sale*. Ms. 05-17-044, on file at the Tahoe National Forest Downieville Ranger District, Camptonville, California.

Budy. 1976. Site Record for CA-YUB-1054 (05-17-53-72). On file at the Tahoe National Forest Downieville Ranger District, Camptonville, California.

California Data Exchange Center, Division of Flood Management. 2002. Department of Water Resources. Accessed: January 2003. Available from:  
<http://cdec.water.ca.gov/>

California Environmental Resources Evaluation System (CERES). 2002. *California State Historical Landmarks, Historical and Cultural Resources*. Tulare County, Fresno County, Kings County. Accessed: September 25, 2002. Available from:  
[http://ceres.ca.gov/geo\)area/counties/lists/national\\_register.html](http://ceres.ca.gov/geo)area/counties/lists/national_register.html)

Carter, C. 1978. Site Record for 05-11-53-176. On file at the Plumas National Forest, Feather River Ranger District Office, Oroville, California.

Carter, C. 1978. Site Record for 05-11-53-178. On file at the Plumas National Forest, Feather River Ranger District Office, Oroville, California.

Carter, C. 1978. Site Record for 05-11-53-179. On file at the Plumas National Forest, Feather River Ranger District Office, Oroville, California.

Carter, C. 1978. Site Record for 05-11-53-180. On file at the Plumas National Forest, Feather River Ranger District Office, Oroville, California.

Carter, C. 1978. Site Record for 05-11-53-181. On file at the Plumas National Forest, Feather River Ranger District Office, Oroville, California.

Carter, C. 1978. *Feather Fork Salvage Sale Archaeological Reconnaissance Report*. Ms. 05-11-22-78, on file at the Plumas National Forest, Feather River Ranger District Office, Oroville, California.

Carter, C. and S. Fuhr. 1978. Site Record for 05-11-53-119. On file at the Plumas National Forest, Feather River Ranger District Office, Oroville, California.

Carter, C. and S. Fuhr. 1978. Site Record for 05-11-53-175. On file at the Plumas National Forest, Feather River Ranger District Office, Oroville, California.

Carter, C. and S. Fuhr. 1978. Site Record for 05-11-53-195. Ms. on file at the Plumas National Forest, Feather River Ranger District, Oroville, California.

Davis, K. 1982. *Little Grass Valley Vegetation Management Project*. Ms. 05-11-49-82, on file at the Plumas National Forest, Feather River Ranger District Office, Oroville, California.

Day D. 1981. *Boehme Salvage Sale*. Ms. 05-11-51-81, on file at the Plumas National Forest, Feather River Ranger District, Oroville, California.

Day D. 1982. *Fountain Salvage*. Ms. 05-11-21-82, on file at the Plumas National Forest Feather River District, Oroville, California.

Day D. 1982. *Hartman II Timber Sale*. Ms. 05-11-42-82, on file at the Plumas National Forest, Feather River Ranger District Office, Oroville, California.

Day D. 1982. *Lewis Ridge SSTS*. Ms. 05-11-78-82, on file at the Plumas National Forest, Feather River Ranger District, Oroville, California.

Deal, K. 1980. *Elbow Timber Sale*. Ms. 05-17-287, on file at the Tahoe National Forest Downieville Ranger District, Camptonville, California.

DeMasi, A. 1981. *Red Star-Ahart Timber Sales*. Ms. 05-17-444, on file with the Tahoe National Forest, Forest Hill Ranger District, Forest Hill, California.

DWR, Reclamation. July 1996. *Interim South Delta Program (ISDP), Sacramento/San Joaquin Delta Draft Environmental Impact Report/Environmental Impact Statement*. Sacramento, California: Department of Water Resources and Reclamation. Chapter 17.

Foster, J.W., J.C. Bingham, C. Carter, K. Cooley-Reynolds, and J.L. Kelly. 1977. *The Effects of Inundation on the Pedersen Site, CA-ELD-201, Folsom Lake California*. Submitted to the National Park Service, Sacramento, California.

Foster J.W. and J.C. Bingham. 1978. *Archeology in Solution: Testing Inundation's Effects at Folsom Reservoir, California*. Submitted to Southwest Cultural Resources Center, National Park Service, Sacramento, California.

Goddard, L. 1985. *Hell Hole Guard Station Administrative Site Withdrawal*. Ms. 05-03-338-327, on file at the El Dorado National Forest, Georgetown Ranger District, Georgetown, California.

Helm, W. 1999. *Pancake Timber Harvest Project Confidential Archaeological Addendum*. Ms. 2-99-069, on file at the Plumas National Forest, Feather River Ranger District, Oroville, California.

Horne, Melinda. 20 June 2002. (Archaeologist, Applied Earthworks, Inc.). Telephone communication with S. Lunceford of Camp Dresser & McKee. Sacramento, California.

Humphreys. 1969. *The Archaeology of New Bullards Bar*. On file at the Tahoe National Forest Downieville Ranger District, Camptonville, California.

Jones, Jeanine. 24 September 2002. (Department of Water Resources.) Telephone conversation with S. Lunceford of Camp Dresser & McKee. Sacramento, California.

Kroeber, A.L. 1925. *Handbook of the Indians of California*. Bureau of American Ethnology Bulletin 78. Originally published by the Government Printing Office as Bulletin 78 of the Bureau of American Ethnology of the Smithsonian Institution , p. 391-395; 531-532; 925-926; 930, 934. New York: Dover Publications, Inc.

Lasick, S. 1997. *PG&E Powerline Clearing, Archaeological Reconnaissance Report Addendum to the Middle Fork of the American River Watershed ARR*. Ms. 05-03-338-179, on file at the El Dorado National Forest, Georgetown Ranger District, Georgetown, California.

Ledwith Lucia, and Bayham F.E.. 3 September 2002. (Coordinators Northeast Center of California Historical Resources Information System.) Letter to John Holson, Pacific Legacy, Inc.

Lopez, J. 1989. *Harrison II Timber Sale*, Ms. 05-11-03-89, on file at the Plumas National Forest, Feather River Ranger District, Oroville, California.

Lowdermilk, B. 1989. *Equestrian Campground*. Ms. 05-11-20-89, on file at the Plumas National Forest, Feather River Ranger District Office, Oroville, California.

Manning, James P. 1981. *Archaeological Survey for the Sly Creek Power Project* (IC Report #3-L-257)

Manning, J. 1981. *Sly Creek Boat Ranch*. Ms. 05-11-78-81, on file at the Plumas National Forest, Feather River Ranger District, Oroville, California.

Manning, J. 1981. *Archaeological Survey for the Sly Creek Power Project, Butte, Yuba, and Plumas County, California*. Ms. B-L-257, on file at the Northeast Information Center of the California Historical Resources Information Center, California State University, Chico, California.

McDougall, Dennis P. July 2001 updated June 2002. *Final Report Cultural Resources Survey for the Kern Delta Water District Water Banking Project*. Hemet, California: Applied EarthWorks, Inc.

Meals, H. 1978. *Bullards Bar Trail*. Ms. 05-17-208, on file at the Tahoe National Forest Downieville Ranger District, Camptonville.

Merced County. 1990. *Merced County Year 2000 General Plan*. Merced, California: Merced County.

- Merced County. 2001. *County of Merced University Community Plan, Draft Environmental Impact Report*. Vol. 1, SCH#2001021056. Merced, California: Merced County. p.4.5-1 – 4.5.5.
- Metropolitan Water District. 1991. *Eastside Reservoir Project Final Environmental Impact Report*. Los Angeles, California: Metropolitan Water District of Southern California. p. 3-30.
- Metropolitan Water District of Southern California. 2001. *Diamond Valley Lake Archaeology and Paleontology ...at a glance*. Los Angeles, California: Metropolitan Water District of Southern California.
- Miller. 1990. *Cow Camp Insect Salvage Timber Sale*. Ms. 05-17-877.54.03, on file with the Tahoe National Forest, Forest Hill Ranger District, Forest Hill, California.
- Miller. 1990. *Horse Shanks Salvage Sale*. Ms. 05-17-887.54.04, on file with the Tahoe National Forest, Forest Hill Ranger District, Forest Hill, California.
- Miller. 1990. *Red Hart Subdivision II Salvage Sale*. Ms. 05-17-877.54.05, on file with the Tahoe National Forest, Forest Hill Ranger District, Forest Hill, California.
- Murphy, A. 1981. *PT&T Slide Creek Timber Sale*. Ms. 05-11-20-81, on file at the Plumas National Forest, Feather River Ranger District, Oroville, California.
- National Park Service. 1988. *National Register of Historic Places – Listed Properties and Determined Eligible Properties*.
- Native Web: California Indian Tribal Maps. Accessed: 30 December 2002. Available from: [http://www.mip.berkeley.edu/cilc\\_images/bibs/maps/tribemap.gif](http://www.mip.berkeley.edu/cilc_images/bibs/maps/tribemap.gif).
- Office of Historic Preservation. Undated. *California Historical Landmarks*. Accessed: 31 December 2002. Available from: [http://ohp.parks.ca.gov/default.asp?page\\_id=21381](http://ohp.parks.ca.gov/default.asp?page_id=21381).
- O'Halloran. 1992. *Bullards Bar Administrative Site*. On file with the Tahoe National Forest Downieville Ranger District, Camptonville, California.
- O'Halloran. 1992. *Oregon Insect Y.G.S.S. Timber Sale*. Ms. 05-17-1005, on file at the Tahoe National Forest Downieville Ranger District, Camptonville, California.
- Olmstead, D.L. and O.C. Stewart. 1978. *Achumawi*. Edited by Heizer, R.F. In: *Handbook of North American Indians*, Vol. 8: p. 225-235. Washington, D.C.: Smithsonian Institution.
- Onken, Steve. 24 February 2003. (Yuba County Water Agency, Power System Manager.) Telephone conversation with M. Wilen of Camp Dresser & McKee. Sacramento, California.

Parker, Patricia L. and King, Thomas F. 1998. *National Register Bulletin Guidelines for Evaluating and Documenting Traditional Cultural Properties*. U.S. Department of Interior, National Park Service, National Register, History and Education. Accessed: January 2003. Available from: <http://www.cr.nps.gov/nr/publications/bulletins/nrb38/>

Petersen, Kathy. August 2002. (Oroville Wyandotte Irrigation District, Power Division Manager.) Telephone conversation with S. Lunceford of Camp Dresser & McKee. Sacramento, California.

Petersen, Kathy. October 2002. (Oroville Wyandotte Irrigation District, Power Division Manager.) Telephone conversation with S. Lunceford of Camp Dresser & McKee. Sacramento, California.

Peterson, P. 1993. *Sly Creek Campground Expansion Archaeological Reconnaissance Report*. Ms. 05-11-25-93, on file at the Plumas National Forest, Feather River Ranger District, Oroville, California.

Peterson, P. 1993. *Peninsula Facilities Water System*. Ms. 05-11-99-93, on file at the Plumas National Forest, Feather River Ranger District Office, Oroville, California.

Peterson, P. 1993. *Peninsula Campground Loop*. Ms. 05-11-100-93, on file at the Plumas National Forest, Feather River Ranger District Office, Oroville, California.

Peterson P. 1994. *Little Grass Valley Reservoir Access Fish Pier*. Ms. 05-11-10-94, on file at the Plumas National Forest, Feather River Ranger District Office, Oroville, California.

Pilas-Treadway. Debbie. 20 August 2002. (Native American Heritage Commission, Environmental Specialist III.) Letter to Hannah Ballard of Pacific Legacy. Albany, California.

Placer County. 1994. *Placer County General Plan Update Countywide General Plan Final EIR, Volume 1*. Auburn, California: Placer County.

Riddell, F. and Olsen. 1966. *New Bullards Bar Reservoir Archaeological Reconnaissance*. Report on file with the Tahoe National Forest Downieville Ranger District, Camptonville, California.

Riddell, F. and Olsen. 1966. Site Record for CA-YUB-18. On file at the Tahoe National Forest Downieville Ranger District, Camptonville, California.

Riddell, F. and Olsen. 1966. Site Record for CA-YUB-19. On file at the Tahoe National Forest Downieville Ranger District, Camptonville, California.

Riddell, F. and Olsen. 1966. Site Record for CA-YUB-20. On file at the Tahoe National Forest Downieville Ranger District, Camptonville, California.

Riddell F. and Olsen. 1966. Site Record for CA-YUB-21. On file at the Tahoe National Forest Downieville Ranger District, Camptonville, California.

San Diego State University, Infodome. *California Indians and Their Reservations*.

Accessed: 1 October 2002. Available from:

<http://infodome.sdsu.edu/research/guides/calindians/calinddictmp.shtml#n>

Santa Clara Valley Water District. 2001. *Draft Santa Clara Valley Water District Stream Maintenance Program, Cultural and Historical Resources*. San Jose, California: Santa Clara Valley Water District.

Santa Clara Valley Water District, *Anderson Dam and Reservoir*. Accessed: March 15, 2003. Available from:

[http://www.valleywater.org/Water/Where\\_Your\\_Water\\_Comes\\_From/Local\\_Water/Reservoirs/Anderson.shtm](http://www.valleywater.org/Water/Where_Your_Water_Comes_From/Local_Water/Reservoirs/Anderson.shtm).)

Scientific Resource Surveys, Inc. 1 August 1988. *Cultural Resources Investigation of the Eastern Reservoir Studies Project Area, Western Riverside County, Los Angeles, California*. Scientific Resource Surveys, Inc., Huntington Beach, California. Report prepared for Metropolitan Water District of Southern California. p. 38.

Shapiro, William and Jackson, Robert. February 1994. Archaeological Investigations at CA-Pla-784 Forest Service Site 05-17-54-370 Foresthill Ranger District of the Tahoe National Forest. Tahoe National Forest, Nevada City, California, p. 1-3.

Smith, N. 1978. *French Meadows Phase II Development*. Ms. 05-17-276, on file with the Tahoe National Forest, Forest Hill Ranger District, Forest Hill, California.

Smith, N. 1994. *Cultural Resource Inventory and Testing for the PCWA Development Phase II*. Ms. 05-17-1091, on file with the Tahoe National Forest, Forest Hill Ranger District, Forest Hill, California.

Starr, Kevin. 2000. *California –The Dream, The Challenge in the Twenty-first Century*. Kevin Starr, State Librarian of California. Accessed: June 2002. Available from: [http://ca.gov/state/portal/myca\\_homepage.jspa.gov](http://ca.gov/state/portal/myca_homepage.jspa.gov) (History and Culture of California).

Steidl, L. 1993. *Bald Mountain*. Ms. 05-11-15-93, on file at the Plumas National Forest, Feather River Ranger District Office, Oroville, California.

Stevens. 1982. *Skyline Compartment Timber Sale*. Ms. 05-17-794 on file with the Tahoe National Forest Downieville Ranger District, Camptonville, California.

Swartz, B.K., Jr. 1958. *A Study of the Material Aspects of Northeastern Maidu Basketry in Kroeber*. Anthropological Society Papers, No. 19: p. 67-84. Berkeley, California: University of California.

Wallace, W.J. 1978. *Southern Valley Yokuts*. Edited by R.F. Heizer. In: Handbook of Northern American Indians, Vol. 8: 448-661. Washington, D.C.: Smithsonian Institution.

Wilson, Norman L. and Arlean H. Towne. 1978. *Nisenan*. Edited by R.F. Heizer. In: Handbook of North American Indians, Vol. 8: 378-397. Washington, D.C.: Smithsonian Institution.

Young, Jeano. 22 July 2002. (Operations Division Department of Water Resources.) Telephone conversation with M. Wilen of Camp Dresser & McKee. Sacramento, California.

Yuba County. 19 May 1994. *Yuba County Environmental Setting and Background Paper*. Marysville, California, p. 15-3-15-9.

Whittier, D.W. 1999. *Ice Creek Timber Harvest Plan Confidential Archaeological Addendum*. Ms. 2-99-329, on file at the Northeast Information Center of the California Historical Resources Information System, California State University, Chico, California.

Zumwalt, Bill. 25 September 2002. (Planning Director Kings County.) Telephone conversation with S. Lunceford of Camp Dresser & McKee. Sacramento, California.